In the Claims

1. (previously presented) A method of diagnosing, in a network comprising two devices connectable by a link, the type of failure of the connection between the devices, said method comprising:

connecting the two devices together at least one of the devices including a plurality of registers, each register being adapted to store data about one or more types of said failure,

running an auto-negotiation sequence,

detecting said failure and passing signals relating to that failure to the relevant register(s),

interrogating the or each register, and

determining the type of said failure from a plurality of types of failure, and wherein the step of determining the type of said failure includes the step of determining the data in the relevant register(s) and from said data, indicating the type of said failure and/or a proposed course of action.

2. (cancelled)

3. (currently amended) ~~A method as claimed in claim 1 in which there is provided a visual display unit and the step of determining the type of said failure includes the step of determining the data in the relevant register(s) and from said data, including~~ The method of claim 1, further comprising:

<u>displaying a message indicating</u> the type of said failure and/or a proposed course of action ~~on said~~ <u>on a</u> visual display unit.

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4. (original) A method as claimed in claim 1 in which said failure comprises a loss of light.

5. (original) A method as claimed in claim 1 in which said failure comprises a bit/word alignment failure.

6. (original) A method as claimed in claim 1 in which said failure comprises a loss of synchronization during auto-negotiation.

7. (original) A method as claimed in claim 1 in which said failure comprises an auto-negotiation protocol hang during base page exchange.

8. (original) A method as claimed in claim 1 in which said failure comprises an auto-negotiation protocol hang during next page exchange.

9. (original) A method as claimed in claim 1 in which said failure comprises an auto-negotiation protocol (repeated) restart due to initiation of a "break link".

10. (original) A method as claimed in claim 1 in which the steps of interrogation and of determining are controlled by a program on a device in the network.

11. (original) A method as claimed in claim 1 in which the steps of interrogation and of determining are controlled by a program on one of said devices.

12. (cancelled)

13. (previously presented) A method as claimed in claim 21 in which the link is a fiber optic signal and light is detected by a transceiver and the detector in a data link/layer of the OSI protocol stack checks for an adequate power level on the light received at the transceiver.

14. (previously presented) A method as claimed in claim 21 in which said signal detector logic deals with clock recovery, comma alignment and receive synchronization so as to check the received signal frequency, encoding integrity and correct alignment of received signals.

15. (cancelled)

16. (previously presented) A method as claimed in claim 22 in which said bit error counter is set at regular intervals, to provide bit error rate calculations.

17. (previously presented) A method as claimed in claim 21 in which said signal detector logic includes an auto negotiation state machine which deals with the exchange of one or more pages of information between the two devices, handles link restarts by the link partner, and reports the link state and hangs.

18. (previously presented) A system for diagnosing in a network comprising two devices connectable by a link, the type of failure of the connection between the devices, comprising:

at least two devices configured to connect together,

at least one of the devices including a plurality of registers, each register being adapted to store data about one or more types of said failure:

wherein the system is configured to

run an auto-negotiation sequence;

detect said failure and passing signals relating to that failure to the relevant register(s);

interrogate the or each register; and

determine the type of said failure from n plurality of types of failure, and wherein the system is further configured to determine the data in the relevant register(s) and from said data indicate a type of failure and/or a proposed course of action.

19. (cancelled)

20. (currently amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for diagnosing, in a network comprising two devices connectable by a link, the type of failure of the connection between the devices, said method comprising the steps of:

connecting the two devices together at least one of the devices including a plurality of registers, each register being adapted to store data about one or more types of said failure.

running auto-negotiation sequence,

detecting said failure and passing signals relating to that failure to the relevant register(s),

interrogating the each or register, and

determining the type of said failure from a plurality of types of failure, and wherein the method includes the step of determining the data in the relevant register(s) and from said data indicating the type of said ~~features~~ <u>failure</u> and a proposed cause of action.

21. (previously presented) A method as claimed in claim 1 wherein said detection step is carried out by signal detector logic in one of said devices.

22. (previously presented) A method as claimed in claim 21 wherein the signal detector logic in one of said devices includes a bit error counter to count symbol errors.

23. (previously presented) A method of claim 1, wherein the type of failure is determined by the occurrence of a large number of bit errors, indicating damage to a fiber optic cable, the course of action proposed being replacement of the fiber optic cable.

24. (previously presented) A method of claim 1 wherein the type of failure is determined by frequent signal detection failure, indicating a loose connection on an end of a link, the course action proposed being checking the connectors.